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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,535	01/12/2004	Shinichi Fukuda	450100-04883	1332
7590 02/26/2007 FROMMER LAWRENCE & HAUG LLP 745 FIFTH AVENUE NEW YORK, NY 10151			EXAMINER CHAUDRY, MUJTABA M	
			ART UNIT 2133	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS			MAIL DATE 02/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/755,535

Applicant(s)

FUKUDA, SHINICHI

Examiner

Mujtaba K. Chaudry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/24/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicants' response was received December 11, 2006.

- Claims 1 and 4 are pending and stand rejected.
- Corrected drawings are accepted.
- Amendment to the specification is accepted.
- Claim objections are withdrawn.
- Claim rejections under 35 USC 112 remain.
- IDS filed is considered.

Application pending.

Response to Amendment

Applicant's arguments/amendments with respect to amended claims 1 and 4 filed December 11, 2006 have been received. All arguments have been fully considered but are not persuasive. The Examiner would like to point out that this action is made final (See MPEP 706.07a).

Applicant contends, "...the prior arts of record do not teach or suggest 4 or more recording heads..." The Examiner respectfully disagrees. Dodt teaches (i.e., Figure 3 and col. 4, lines 2-5) two pairs write heads. The Examiner would like to point out that two pairs of heads is equivalent to 4 heads since "a pair" is two and then 2 pairs is 4.

Applicant contends rejection under 35 USC 112 with regards to the limitation of "dispersed manner" and mentions in remarks (page 7) that the claims have been amended to read "over a plurality of tracks" when infact they have not been.

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The Examiner disagrees with the Applicant and maintains rejections with respect to amended claims 1 and 4. All arguments have been considered. It is the Examiner's conclusion that amended claims 1 and 4, as presented, are not patentably distinct or non-obvious over the prior arts of record. Furthermore, the rejection under title 35 USC 112 is maintained and detailed below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For example, in claim 1:

- In lines 11 and 12, the claim recites, in part, "...second series code is recorded by N recording heads in a **dispersed manner**..." The phrase, "dispersed manner" is a relative phrase since "dispersed" could be defined in multiple ways. For the purposes of examination this limitation will not be considered.
- In lines 13-15, the claim recites, in part, "...said second series code generating means generates said second series code such that **a ratio between said second parity and said second series code equals 1/N**...". Again, it is not clear what this means. The ratio is interpreted as: **ratio = second parity / second series code = 1 / N**. It seems as though **second series code will always be 1** since the claim states **a second series code** in paragraph 4. If that is the case then the **ratio = second parity / second series**

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code = second parity / 1 = 1 / N which is simply ratio = second parity = 1 / N,

which is not mathematically correct. To the extent possible, Examiner will make interpretation in accordance with MPEP 2111.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dodt et al.

(herein after: Dodt, USPN 5369641) further in view of Misawa et al. (herein after: Misawa, USPN 6560402 B1).

As per claim 1, Dodt substantially teaches a recording apparatus of a helical scan type capable of recording data as inclined tracks onto a tape-shaped recoding medium (col. 18, lines 42-46; for example) comprising: a rotary drum having N recording heads on a circumference thereof (Figure 3 and col. 3, line 63—col. 4, lines 1-6); first series code generating means for generating a first series code by adding a first parity to a first data array in a predetermined direction (col. 11, lines 6-8). The Examiner would like to point out that the first parity is done on a row-by-row basis, which is analogous to a predetermined direction. Dodt also teaches a second

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data array in a direction orthogonal to said direction of said first data array (col. 2, lines 35-38); and recording control means for controlling recording such that said first series code is recorded by one of said N recording heads and said second series code is recorded by said N recording heads in a dispersed manner, on said tape-shaped recording medium, (Figure 4, reference number 411, shown below, and col. 2, lines 35-38) wherein said second series code generating means generates said second series code such that a ratio of said second parity to said second series code becomes $1/N$ or more (i.e., Figure 7 and col. 2, lines 40-43). Dot teaches the first code is generated on per data segment whereas the second code is generated across multiple data segments.

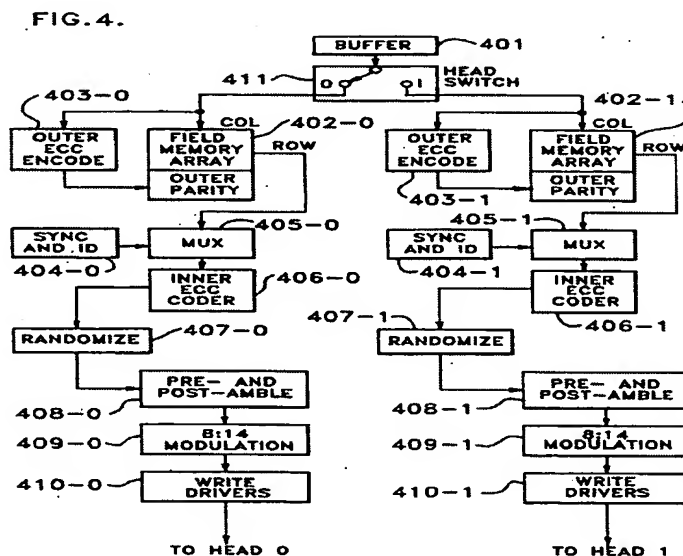
Dot, Figure 4:

U.S. Patent

Nov. 29, 1994

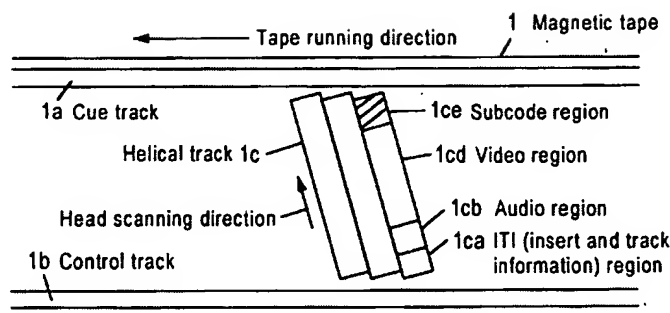
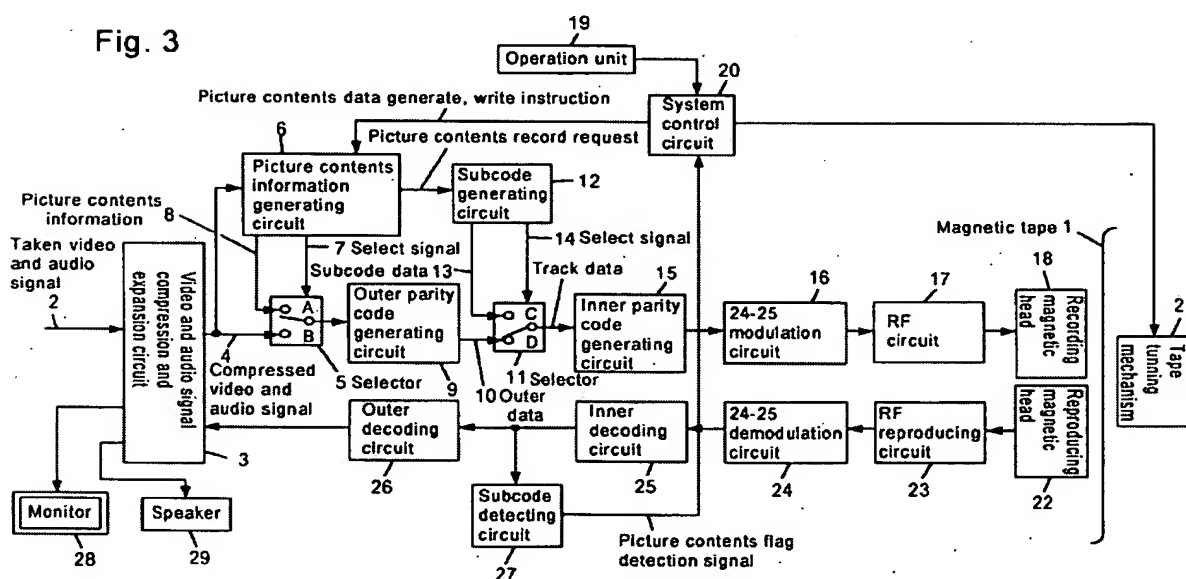
Sheet 3 of 12

5,369,641



Dot does not explicitly teach the second series code generating means for generating a second series code by adding a *second parity* as stated in the present application.

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Misawa, Figures 1 and 3:**Fig. 1(a)****Fig. 3**

However, Misawa teaches, in an analogous art, (Figures 1 and 3, shown above) a magnetic tape 1 has a cue track 1a in the tape running direction, and a control track 1b disposed at both ends of the tape, and a helical track 1c disposed in the center. Particularly, Misawa teaches (i.e., Figure 3 and col. 4, lines 10-23) an outer parity code generating circuit 9 (analogous to first series code generating means) and an inner parity generating circuit 15 (analogous to

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second series code generating means). In other words, Misawa teaches a second series code generating means (Figure 3, reference 15) for generating a second series code by *adding a second parity*. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the second series code generating means of Dodt to generate a second series code by adding a second parity. This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by making the second series code generating means of Dodt to generate a second series code by adding a second parity would have improved on the error detection/correction as well as improved the overall speed of the system during recording and/or retrieval (Misawa, col. 2, lines 35-37).

As per claim 4, Dodt substantially teaches a recording method of a helical scan type capable of recording data as inclined tracks onto a tape-shaped recoding medium (col. 18, lines 42-46, for example) by N recording heads on a circumference thereof (Figure 3 and col. 3, line 63—col. 4, lines 1-6); generating a first series code by adding a first parity to a first data array in a predetermined direction (col. 11, lines 6-8). The Examiner would like to point out that the first parity is done on a row-by-row basis which is analogous to a predetermined direction. Dodt also teaches a second data array in a direction orthogonal to said direction of said first data array (col. 2, lines 35-38); and controlling recording such that said first series code is recorded by one of said N recording heads and said second series code is recorded by said N recording heads in a dispersed manner, on said tape-shaped recording medium, (Figure 4, reference number 411, shown above, and col. 2, lines 35-38) wherein generating said second series code such that a ratio of said second parity to said second series code becomes $1/N$ or more (i.e., Figure 7 and col.

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2, lines 40-43). Dodt teaches the first code is generated on per data segment whereas the second code is generated across multiple data segments.

Dodt does not explicitly teach the second series code generating means for generating a second series code by adding *a second parity* as stated in the present application.

However, Misawa teaches, in an analogous art, (Figures 1 and 3, shown above) a magnetic tape 1 has a cue track 1a in the tape running direction, and a control track 1b disposed at both ends of the tape, and a helical track 1c disposed in the center. Particularly, Misawa teaches (i.e., Figure 3 and col. 4, lines 10-23) a outer parity code generating circuit 9 and a inner parity generating circuit 15. In other words, Misawa teaches a second series code generating means (Figure 3, reference 15) for generating a second series code by adding a second parity. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the second series code generating means of Dodt to generate a second series code by adding a second parity. This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by making the second series code generating means of Dodt to generate a second series code by adding a second parity would have improved the overall speed of the system during recording and/or retrieval (Misawa, col. 2, lines 35-37).

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Conclusion

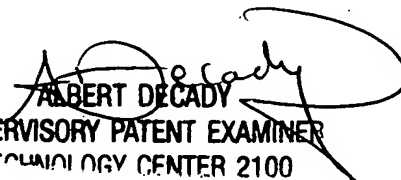
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiries concerning this communication should be directed to the examiner, Mujtaba Chaudry who may be reached at 571-272-3817. The examiner may normally be reached Mon – Thur 6:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Albert DeCady at 571-272-3819.


Mujtaba Chaudry
Art Unit 2133
February 14, 2007


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TECHNOLOGY CENTER 2100